

# Free Paper Presentations

## 1. Teaching The Next Generation of Educators in Medical Simulation

*Dr Thomas Trouton (Clinical Education Fellow, Speaker), Dr Sebastian Tanner (Clinical Education Fellow), Dr Manvir Sandher (Clinical Education Fellow) South Warwickshire University NHS Foundation Trust*

The use of simulation in undergraduate and postgraduate medical curricula is ever growing and is arguably one of the most prominent innovations in medical education over the past couple of decades.

We designed and implemented a new student selected component (SSC) to introduce students to the concepts behind the use of medical simulation in education and allow them to plan and deliver their own simulated medical scenario to their peers. There was a mix of lectures, seminars and interactive group work sessions, as well as hands on experience in the simulation suite, to introduce key concepts related to medical simulation including technical considerations in simulation, human factors, debriefing and troubleshooting scenarios.

We evaluated the success of our SSC using “Net Promotor Scores” (NPS) to assess students’ confidence in planning and facilitating a simulation-based teaching session, as well as leading a debrief session. In all three domains we showed an increase in the confidence of the students. We also showed an increase in confidence in the management of common medical emergencies because of the SSC.

	Pre-course NPS	Post-course NPS
How confident are you in planning a simulated medical scenario?	-93	73
How confident are you in using simulation to facilitate learning?	-57	86
How confident are you in leading a debrief session to facilitate feedback?	-86	27
How confident are you in managing common medical emergencies?	-71	14

Table 1. Results of the pre- and post-course NPS

Overall, the students who chose our SSC had the opportunity to learn new skills in medical education, with a particular focus on the use of simulation-based teaching, and feedback highlighted that several students would take these skills forward in their own practice. We demonstrated an increase in confidence in several domains related to the use of medical simulation in education and have hopefully inspired a new generation of medical educators.

Our experiences and results of our SSC have been presented previously as a poster at the RCOA Winter Symposium 2022 (this was a hybrid event, and the posters were presented electronically on the online platform and not in person).

# Free Paper Presentations

## 2. Choose Your Own Adventure: Introducing Undergraduates to Decision Making in Anaesthesia

Dr Richard P. W. Watson - Clinical Teaching Fellow - Royal Shrewsbury Hospital  
Mr Matthew Pottage - Final Year Medical Student - School of Medicine: Keele University

**Introduction:** Introducing undergraduate students to anaesthesia is a challenge, given tight schedules and an intimidating appearance that can leave students overwhelmed (Oti, et al., 2022). Introducing decision making in anaesthesia is a further challenge, given the lack of foundational knowledge that would be required to underpin higher level decision making (Taylor & Hamdy, 2013). The authors hypothesised an interactive software package would allow students to explore anaesthetics terminology and concepts, then use that to make simplified decisions and understand treatment rationales.

**Methods:** We developed a free software package (The Choose your Own Adventure) to allow students to make some simple decisions regarding an anaesthetic case - these included choosing regional anaesthesia for a complex abdominal procedure, management of emergency out of theatre scenarios and balancing safety and turnover in a perianal abscess. These cases were accompanied by purpose written reference material, aiming to allow the students to access knowledge for guiding them through these decisions. Appetite and prior exposure to anaesthesia were measured before and after using the application. Final and penultimate year students volunteered to attend teaching exclusively delivered by the package.

**Results:** 20 students trialed the software. 90% improved their understanding of anaesthesia (fig 1) with 75% reporting an increased interest in the speciality. The effect was seen both amongst students without any prior exposure, and those with more than a month of experience. Free text feedback highlighted achievement of intended learning outcomes and understanding of the complexity of anaesthesia management.

Did the activity improve your knowledge and understanding of anaesthetics? Please rank between 1 - 5 (1 being greatly worsened understanding, 5 being greatly improved)  
20 responses

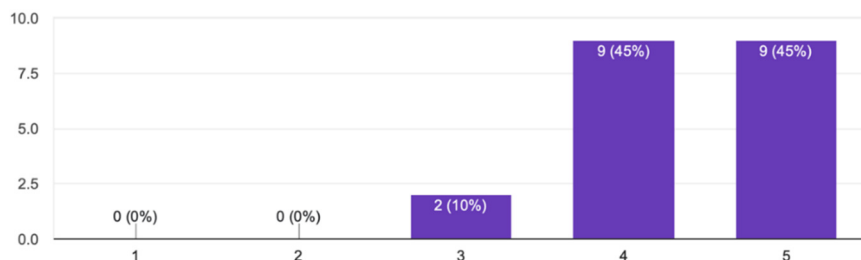


Figure 1

Discussion: Software based student experiences are a valid adjunct to clinical exposure or introduction to concepts within anaesthesia. Applying this broadly may assist departments in providing undergraduate and post-graduate education. Improving understanding of anaesthesia may improve understanding and knowledge of the speciality – contributors to future career decisions (Adudu, et al., 2010).

### Bibliography

Adudu, O. P. et al., 2010. Medical student impressions of anesthesiology and anesthesiologists. *Canadian Journal of Anesthesia/Journal canadien d'anesthésie*, Volume 57, pp. 792-793.

Oti, C., Hodge, K., Lewis, C. & Dharmarajah, A., 2022. *ATIUM: structured anaesthetic training for undergraduates*. [Online]

Available at: <https://rcoa.ac.uk/bulletin/october-2022/atium-structured-anaesthetic-training-undergraduates> [Accessed 26 February 2023].

Taylor, D. & Hamdy, H., 2013. Adult learning theories: Implications for learning and teaching in medical education: AMEE Guide No. 83. *Medical Teacher*, 35(11), p. e1561–e1572.

# Free Paper Presentations

## 3. Leading by Example in a Near-Peer Medical Education Course

Anna von Essen, ST6, Princess Alexandra Hospital, Harlow

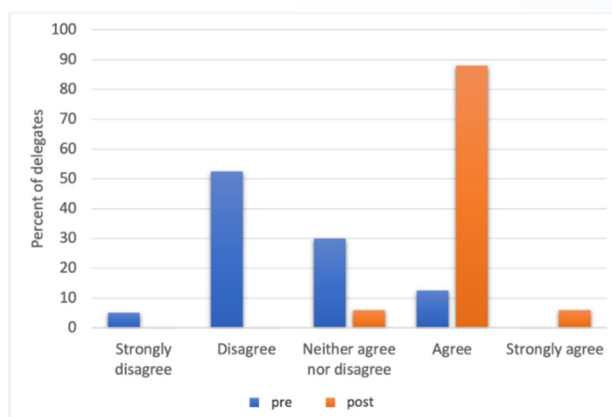
**Introduction:** Anaesthetic training relies on near-peer supervision and teaching during on-calls, a practice with benefits for the learner, the educator, and the department.<sup>1</sup> However, trainees attending medical education courses may struggle to apply theory and recommendations to practice. A demonstration of good practice not only illustrates one's learning point but may enhance learners' self-belief and motivation to try out new skills. In addition, analytical and creative tasks allow learners to apply new knowledge to example situations.

**Methods:** LEAF-BUD, a medical education course in the East of England, uses a variety of teaching techniques that are explicitly referenced pre-emptively or retrospectively during relevant modules, to help trainees understand the example in practice. Resources include pre-course priming assignments, an intra-course workbook, and a post-course handbook with further reading. Meaningful activities include designing a teaching plan, small group discussions of observed teaching practices, and opportunities for reflection. Additionally, the faculty demonstrate a variety of teaching techniques 'live'.

**Results:** LEAF-BUD has received excellent evaluations, with all modules rating 4.40-4.61 on a 5-point Likert scale. Delayed (2-month) feedback demonstrates lasting improvements, e.g., having a range of techniques to manage the 'difficult' learner (pre-course 12.5% agree or strongly agree, post-course 94%; see Figure 1). Free-text comments mention the practical applicability of the course, as "eye opening and concretizing many issues about learning and teaching."

**Discussion:** Good teaching practices, and their overt identification, are major contributing factors to LEAF-BUD's high ratings and lasting effects. Obstacles include finding time to create necessary resources; we overcame this by pooling the efforts of a group, and later a fellowship allowed dedicated time. Additionally, the faculty must be comfortable with illustrating teaching principles on-demand. We were selective in our recruitment, and develop faculty further with training, observation on courses, and 1-to-1 feedback. Using this model, LEAF-BUD promotes teaching skills very effectively.

**Figure 1.** Responses to "I have a range of techniques for managing the 'difficult' learner" before and 2 months after attending LEAF-BUD.



### References:

1. Ten Cate, O. and Durning, S., 2007. Peer teaching in medical education: twelve reasons to move from theory to practice. *Medical teacher*, 29(6), pp.591-599. This submission has not been presented elsewhere, although an abstract on a different aspect of developing LEAF-BUD has been submitted to DMEC.

# Free Paper Presentations

## 4. Consultant Updates on a Limited Budget in a District General Hospital: An Effective Method to Supplement the Education of Senior Anaesthetists

B. Perkins<sup>1</sup>, H. Sivakumar<sup>1</sup>, S. Mehrotra<sup>1</sup>, R. Emamdee<sup>1</sup>

<sup>1</sup>Mid and South Essex NHS Trust, Broomfield Hospital, Dept of Anaesthetics, Essex, United Kingdom

**Background:** Our multi-site trust includes tertiary Cardiothoracic, Plastics and Burns Units, serving a population of 1.2 million. In 2012 the department piloted a locally run consultant update on regional anaesthesia<sup>1</sup>. Service evaluation provided positive results. Declining study leave budgets and the covid pandemic provided impetus to develop the scope of updates to include other relevant topics.

**Methods:** Advertisement via departmental email attracted a minimum of 25 in-person attendees to each update. Feedback forms were designed to assess course effectiveness: overall satisfaction, quality of content, presentation, and comments. A small £20 stipend for dinner was requested. Updates lasted two hours and attracted two CME points each.

**Results and Discussion:** Over two years, four updates were held: pain management, upper limb and lateral thoracic wall blocks, paediatrics anaesthesia and pre-assessment. Cumulatively 184 participants attended: 104 in-person and 80 online. Six participants were outside of the catchment hospitals. 70% were repeat attendees.

96% and 94% of preassessment and pain participants respectively were satisfied with the relevance of the update to their clinical commitments. All participants thought the paediatric talks (content, relevance, presentation) were good or very good. All regional update participants reported they were satisfied with the course, with 88% 'very satisfied' with the individual block stations. All felt they had adequate time for demonstration and practice.

Feedback comments included the usefulness of the updates in achieving multi-department cohesion, with more courses on future topics requested. Participants were generally happy with the course organisation and CPD provision at minimal cost. The most useful negative comment was the requirement for better audio-visual technology for the remote attendees.

**Conclusion:** Novel ways are necessary to update senior anaesthetists. Local courses supplement but do not replace international congresses. Given the continued success of our update programme we encourage other units to try our approach.

### References

1. Mehrotra S. Ultrasound Workshop for Senior Anaesthetist: Budget Course [abstract]. In: 36th Annual European Society of Regional Anaesthesia Congress; 2017 Sept. 13th-17th. Lugano, Switzerland: ESRA; 2017.

# Free Paper Presentations

## 5. Students as Key Stakeholders in Undergraduate Anaesthetics and Acute Care Curriculum Design

Charlotte Gross<sup>1</sup>, Robert Palin<sup>1</sup>, Rhona Martin<sup>1</sup>, Milena Vannahme<sup>1</sup>, Rebecca Yates<sup>1</sup>, Stephanie Oade<sup>1</sup>, Adam Burns<sup>1,2</sup> University of Leeds School of Medicine, University of Leeds, Leeds, LS2 9JT; Leeds Teaching Hospitals NHS Trust, Great George Street, Leeds, LS1 3EX

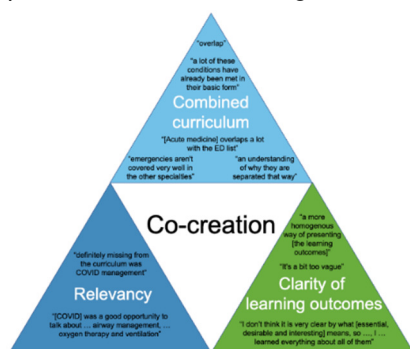
**Authors;** Charlotte Gross, Medical student (*Presenting Author*), Dr Robert Palin, Educational fellow / ACCS Anaesthetics (*Presenting Author*), Dr Rhona Martin, Educational fellow / Anaesthetics Registrar, Dr Milena Vannahme, Educational fellow / Anaesthetics Registrar, Dr Rebecca Yates, Educational fellow / Emergency Medicine Registrar, Dr Stephanie Oade, Educational fellow / Acute Medicine Registrar, Dr Adam Burns, Consultant in Acute Medicine

**Introduction:** Students are increasingly recognised as value-adding collaborators in the creation of their own undergraduate education<sup>[1]</sup>. We undertook a co-creation project for the refashioning of the acute and critical care (ACC) module of the medicine and surgery course at the University of Leeds, which engaged student ideas in curriculum design.

**Methods:** Invitations to participate were sent out to students who had completed the module within six months. Ten students underwent three hour-long structured focus groups led by an anaesthetic trainee and supported by a consultant acute physician. Recordings were transcribed and themes analysed (Figure 1), with results contributing to curriculum design.

**Results:** Students highlighted significant intra-module content overlaps. In response, the previously segregated curriculum was combined to minimise repetition. The “overlap” in clinical conditions and differences in patient management across the four ACC module strands (anaesthetics and acute/emergency/intensive care medicine) was identified by most students. Students noted a significant overlap with other Year 4 modules and that teaching in these areas was often lacking. Consequently, a “suggested student activities” appendix was created to highlight ACC skill opportunities in other Year 4 modules. One student noted the absence of “COVID [-19] management” in the curriculum which raised questions about curriculum relevancy. Several students discussed the clarity of learning objectives and the previous curriculum’s vague “essential, desirable and interesting” core condition descriptors. These were therefore replaced with a single condition list. One student suggested that a “more ... homogenous” approach would improve understanding of learning outcomes. Action verbs preceding learning outcomes were reviewed, restricted and optimised and videos provided for explanation.

**Conclusion:** Based on the actionable findings following the co-creation project, we recommend that co-creation be utilised during all curriculum redesigns. Students can offer valuable input at the curriculum design level for the benefit of their own learning and future students’ curriculum experience.



**Figure 1** – Visual representation of key themes highlighted by ACC co-creation project.

### References:

1. Geraghty, J.R., et al., *Empowering medical students as agents of curricular change: a value-added approach to student engagement in medical education*. Perspectives on Medical Education, 2020. **9**(1): p. 60-65.

# Free Paper Presentations

## 6. Promoting & Encouraging Exception Reporting (PEER) Quality Improvement Project

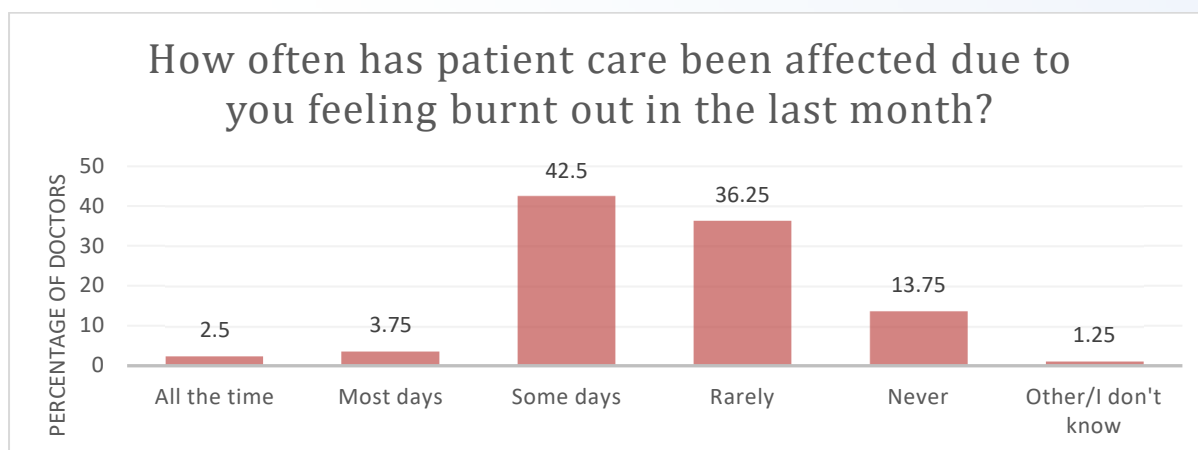
Dr Schnell D'Sa (ST1, Speaker), Dr O'nisa Ali (FY1), Dr Mobola Sonola (FY1)

In 2016, NHS England introduced exception reporting in the 'Junior Doctors and Dentists in Training contract'. This is a process whereby doctors inform their employer when "their-day-to-day work varies significantly and/or regularly from the agreed work schedule"<sup>1</sup>. Doctors can report overtime hours and understaffing issues to receive pay and other resolutions.

Our aim is to identify the proportion of doctors in Peterborough City Hospital (PCH) who understand how to exception report and complete the practice. Additionally, we aim to understand the rationale behind why doctors would choose not to exception report and the impact on staff/ patients.

We collected data using a survey which was circulated to all doctors at PCH, from F1s to consultant grade across all specialities.

Of our 80 respondents, 56.25% knew how to exception report and 22.5% were taught this in their departmental inductions. In the last month, 88.75% reported working overtime yet 51.25% of respondents have never exception reported their overtime hours worked. Obstacles to exception reporting included being "unsure if appropriate" (38.75%), "lack of energy/free time" (45%), "fear of backlash" (35%) and being "discouraged by [their] department" (8.75%). Working beyond rostered hours resulted in "lack of work/life balance" (77.5%), "burn-out/fatigue" (75%), "reduced morale" (57.5%) and "suboptimal patient care" (30%). Moreover, 48.75% of doctors reported patient care has been affected due to the feeling of burn-out some days or more in the last month [Fig. 1].



**Figure 1:** Graph demonstrating how frequently doctors have reported patient care has been affected due to feeling burnt out in the last month.

This study illustrated that a significant proportion of doctors do not exception report for a variety of reasons. Some of these reasons have practical solutions that we hope to tackle in our quality improvement project. It also highlighted the detrimental effects on doctors' well-being and patient care. Exception reporting exists to protect the NHS' staff and patients, but more must be done to guarantee its accessibility and use.

**References:** Terms and Conditions of Service for NHS Doctors and Dentists in Training (England) 2016 Version 3 21 April 2017

# Poster Presentations

## 1. Total Intravenous Anaesthesia (TIVA) Postgraduate Education Programme Proposal

Stanimir Stoilov<sup>1</sup> (medical student; presenter) and Dr Umair Ansari<sup>1,2</sup> (Consultant Anaesthetist)  
<sup>1</sup> Warwick Medical School, Coventry CV4 7HL <sup>2</sup> University Hospitals Coventry and Warwickshire NHS Foundation Trust, Coventry CV2 2DX

**Introduction:** As well as having advantages over inhalation agents, total intravenous anaesthesia (TIVA) also offers a reduction in carbon footprint caused by anaesthetic gases which accounts for up to 5% of hospitals' CO<sub>2</sub> emissions in high income countries.<sup>1</sup> With the use of TIVA there are patient safety challenges arising from complexity of administration and lack of formal training. According to the 5<sup>th</sup> National Audit Project, a link exists between cases of accidental awareness during general anaesthesia (AAGA) and inexperience in TIVA methods which the 2020 Royal College of Anaesthetists Quality Improvement Compendium considers a priority subject.<sup>2</sup> This audit aimed to establish the volume of formal TIVA training received by trainee anaesthetists at a tertiary West Midlands hospital and propose a suitable education programme to address any gaps.

**Methods:** The number of formal TIVA training sessions attended by anaesthetics trainees at our hospital was collected via an anonymous online questionnaire between October and November 2022.

**Results:** There were a total of 17 responses (38% of all trainees) and a median of one (range 0–4) session attended. Most respondents (88%) were in higher specialty training and the number of training sessions attended increased with seniority, whereby ST7 trainees (n=5) attended 47% of all sessions. In keeping with national data, our results indicate that formal TIVA education programmes need to be established to improve patient safety and add to sustainability efforts.

**Discussion:** Our education programme is based on a framework by the Society for Intravenous Anaesthesia. It comprises four teaching sessions delivered at Novice and Intermediate training – three knowledge based and one practical session. A refresher is intended for those in higher training posts. Pre- and post-session quizzes and teaching feedback will be used to evaluate this quality improvement exercise, in conjunction with further research into number of AAGA cases with TIVA

**Table 1.** Example of a TIVA Teaching Day Programme

Time	Session	Format
08:30-09:00	Pre-teaching TIVA quiz	In-person
09:00-10:00	TIVA Pharmacokinetics	In-person/online
10:00-10:15	BREAK	
10:15-11:15	TIVA Pharmacodynamics	In-person/online
11:15-12:15	TIVA Equipment	In-person
12:15-13:15	LUNCH BREAK	
13:15-15:00	TIVA in practice	In-person
15:00-16:00	Practical assessment (OSCE)	In-person
16:00-16:15	Programme evaluation and next steps	In-person

**Abbreviations:** Total intravenous anaesthesia (TIVA); Objective Structured Clinical Examination (OSCE)

### References:

1. Tennison I, Roschnik S, Ashby B, Boyd R, Hamilton I, Oreszczyń T, et al. Health care's response to climate change: a carbon footprint assessment of the NHS in England. *The Lancet Planetary Health*. 2021;5(2):e84-e92.
2. Pandit J, Andrade J, Bogod D, Hitchman J, Jonker W, Lucas N, et al. 5th National Audit Project (NAP5) on accidental awareness during general anaesthesia: summary of main findings and risk factors. *British journal of anaesthesia*. 2014;113(4):549-59.

# Poster Presentations

## 2. East Midlands Anaesthetics Taster Course

*Sophie Hunter CT3, Sarah McAnallen CT1, Nottingham University Hospitals*

**Introduction:** Foundation doctors often have poor knowledge of what a career in anaesthetics entails. Many have just a single week of experience at medical school and there are few foundation posts incorporating anaesthetics.[1] We aimed to organise a taster day for foundation trainees offering both an insight into the career and relevant clinical skills.

**Methods:** Participants were recruited via posters emailed to all foundation trainees in the Trent Foundation School. The one-day course at Nottingham City Postgraduate Centre consisted of talks on the application process, interviews, training and career options (including intensive care and pre-hospital medicine). We introduced candidates to practical skills including airway assessment, intubation, front-of-neck access, spinal anaesthesia and basic ultrasound. Pre- and post-course questionnaires assessed candidates' confidence on aforementioned topics.

**Results:** Of 60 respondents, 30 trainees were invited, of which 29 attended. Pre-course questionnaires demonstrated 'poor' (21%), 'fair' (34%) or 'satisfactory' (26%) confidence in the course content. Post-course feedback demonstrated improved confidence universally (satisfactory (1%); 'good' (40%); 'excellent' (59%). 100% agreed or strongly agreed that their interest in anaesthetics increased and would recommend the course to others.

**Conclusions and Recommendations:** This pilot course gave attendees a good insight into a career in anaesthetics and the key skills required. In future, we aim to organise more courses to facilitate every trainee who wishes to attend and obtain funding to keep the event free of charge whilst improving the quality of clinical equipment.

### References

1. *Broadening the Foundation Programme: Recommendations and Implementation Guidance*. Health Education England (2014). Available at <https://www.hee.nhs.uk/sites/default/files/documents/Broadening%20the%20Foundation%20Programme%20-%20Recommendations%20and%20implementation%20guidance.pdf>



# Poster Presentations

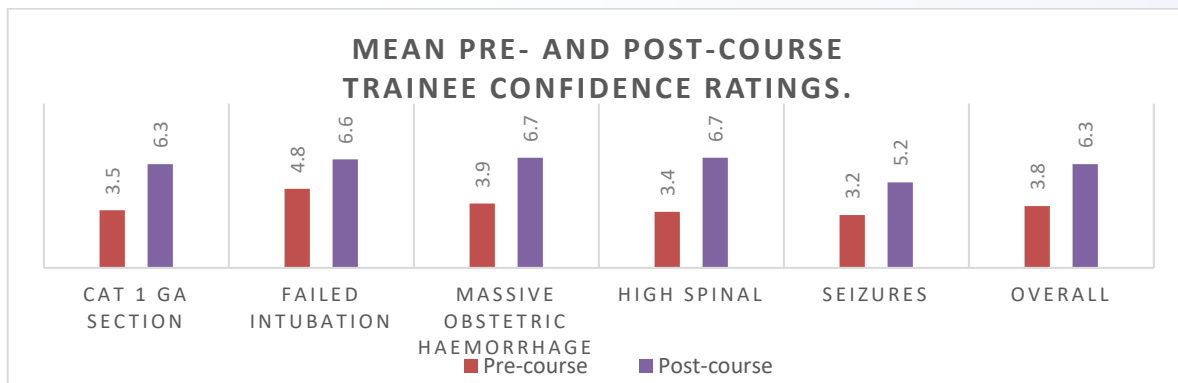
## 3. High Fidelity Simulation Training as a Tool to Improve Confidence in Obstetric Anaesthesia Critical Incident Management for Novice Trainees

Dr Robert J Watson – Senior Clinical Fellow (Anaesthetics) at University Hospitals of Northamptonshire. (Speaker/Lead author). Dr Fiona E Webster – Consultant Anaesthetist at University Hospitals of Leicester. Dr Georgia Knight – Consultant Anaesthetist at University Hospitals of Leicester.

**Introduction:** Novice training in obstetric anaesthesia often has limited exposure to critical incidents, which may occur more frequently out of hours (1). This can cause anxiety for trainees before commencing on-calls with more distant supervision, despite assessed competence. We developed simulation training to improve trainee confidence in managing obstetric critical incidents.

**Methods:** Four scenarios encompassed common obstetric critical incidents. Novice trainees were invited to attend in groups of four, allowing each to take the lead for a scenario, and assist the others. Three faculty and a SimMan mannequin were utilised. Pre- and post-course questionnaires were used to assess confidence before and after, with confidence rated on a scale of one to ten.

**Results:** Twelve trainees attended over three sessions. Obstetric experience ranged from one to twelve weeks, with a mean of nine weeks. Five of the trainees had completed their IACOA, one had experienced out-of-hours work. Overall confidence mean increased from 3.8 out of 10 to 6.3. Confidence ratings for individual scenarios followed a similar trend and are summarised graphically below. All twelve trainees stated that they felt more prepared for undertaking out-of-hour work after attending.



**Discussion:** The results reiterate that trainees may lack confidence in managing critical incidents, even towards the end of their novice training period. This can leave them apprehensive about going onto the obstetric on-call rota. It also has potential patient safety ramifications if they lack confidence, despite having the necessary skills, to manage critical incidents independently, or until senior help arrives (2). This small sample shows that a brief simulation session, with a high faculty to delegate ratio, can significantly improve trainees' confidence ahead of commencing out-of-hour work in obstetrics. In our deanery this simulation is now run three-monthly, to allow all novice trainees to attend during their training.

### References:

1. Smith TS, Johannsson HE, Sadler C. Trials of labour: Can simulation make a difference to obstetric anaesthetic training? *Curr Anaesth Crit Care*. 2005 Dec; 16(5): 289-296.
2. Byrne AJ, Blagrove MT, McDougall SJP. Dynamic confidence during simulated clinical tasks. *Postgrad Med J*. 2005 Dec; 81(962): 785-788.

# Poster Presentations

## 4. Utilising Quality Improvement Methods to Improve Intensive Care Education with Results

**Quality Improvement Pilot Study** Dr Jan Man WONG – ST5 Anaesthetic Trainee – Barts and the London School of Anaesthesia. MBBS FRCA PGDip Med Ed  
Dr Karen TAM – Consultant in Intensive Care Medicine – Barking Havering and Redbridge Trust, Romford, United Kingdom. MBChB MRCP EDIC FFICM

**Introduction:** Barking Havering and Redbridge Trust is home to 57 Level 3 adult ITU beds. The medical workforce ranges from advanced critical care practitioners to senior trainees. It has been identified in surveys that some education indicators have scored in the bottom quartile. We describe a novel approach to utilising quality improvement tools to guide and direct strategy plans.

**Methodology:** Examining three specific indicators within the GMC survey, namely feedback, education governance and education supervision, we embarked on stakeholder analysis. An online questionnaire, followed by semi-structured interviews over Zoom was conducted from November to December 2021. Thematic analysis was utilised for qualitative analysis. The results were used to inform further fishbone analysis and a driver diagram has been constructed to drive change within the department.

**Results:** A total of 215 minutes of interviews were conducted with ten clinicians from different grades and backgrounds. Institutional themes were addressed at the education governance meeting. The good practice was promoted, agreed and refreshed by the consultant body. Anecdotally juniors felt validated and valued by the interest in their educational progress and some progress. Subsequently, the next year's GMC survey all the indicators have migrated to the medium two quartiles instead of the bottom quartile (see Figure 1).

**Discussion:** It has been recognised quality improvement and medical education shares the foundation of experiential and spiral learning (1, 2). We believe we have described an innovative approach, utilising stakeholder analysis to engage users and to embed and inform future education strategies. We also demonstrated how the depth of qualitative methods can enrich quality improvement tools, with tangible results.

Figure 1: Results of improvement of the three educational indicators

Indicator	2018	2019	2021	2022
Intensive care medicine				
Barking, Havering and Redbridge University Hospitals NHS Trust				
Overall Satisfaction	86.23	86.00	75.00	91.67
Clinical Supervision	86.63	90.91	89.88	90.42
Clinical Supervision out of hours	85.42	87.50	89.32	85.23
Reporting systems	75.67	67.50	52.86	75.91
Work Load	51.44	51.70	52.29	59.55
Teamwork	73.72	65.15	64.17	81.94
Handover	77.43	70.45	59.38	67.71
Supportive environment	74.23	69.09	70.00	77.08
Induction	72.91	79.55	75.00	81.67
Adequate Experience	87.88	84.55	82.50	93.75
Curriculum Coverage	85.90	84.85	81.67	
Educational Governance	65.99	60.61	67.59	82.64
Educational Supervision	75.96	76.14	65.63	80.54
Feedback	66.37	49.40	56.94	78.70
Local Teaching	60.83	71.25	43.33	60.00
Regional Teaching	64.17	70.42	62.50	53.13
Study Leave	55.93	60.61	50.83	53.96
Role Design	75.00	56.25	58.75	67.19
			53.93	64.88

### Legend 1: Legend of GMC NTS colour codes

- Red: a red outlier is a score in the bottom quartile of the benchmark group, and the confidence interval does not overlap with that of the benchmark mean.
- Pink: a score in the bottom quartile, but the confidence interval overlaps with that of the benchmark mean.
- White: a score in between the top and bottom quartiles of the benchmark group.
- Light green: a score in the top quartile, but the confidence interval overlaps with that of the benchmark mean.
- Dark green: a green outlier is a score in the top quartile of the benchmark group, and the confidence interval does not overlap with that of the benchmark mean.
- Grey: fewer than three results (n<3). We only report results which have three or more responses.

### References:

1. Wong BM and Headrick LA. Application of continuous quality improvement to medical education. *Medical Education*. 2020:55 [Accessed 12 February 2022]. Available from: <https://doi.org/10.1111/medu.14351>
2. Foong TW, Tiong H-F, Ong SY, Chen FG. Using quality improvement tools to enhance learning in an anaesthesia unit. *Medical Teacher*. 2020:42. [accessed 12 February 2022]. Available from: <https://doi.org/10.1080/0142159X.2020.1799960>

# Poster Presentations

## 5. Neuroanaesthesia “One-Pagers”, A Novel Educational Resource for Anaesthetists

*Dr James Wright, ST5 Anaesthetics Registrar, University Hospitals Sussex*

**Introduction:** Anaesthesia for neurosurgery forms a core part of the anaesthetics training curriculum. All trainees rotate through a module in neuroanaesthesia, and it forms a key part of the FRCA exams. I developed a series of one-page summary guides for some of the nuanced areas of this specialty to aid trainees with their exams and modules.

**Methods:** A survey was sent to trainees within a large tertiary centre, which provides neuroanaesthesia. 40 responses were received. This survey was sent to establish whether trainees would benefit from simple reference guides for elements of neuroanaesthesia which they had not come across in other areas. It also investigated whether trainees would find locally created reference guides useful for directing and aiding their revision for FRCA and FFICM exams. In addition to the survey, consultant neuroanaesthetists were asked for topics which they felt trainees often had limited knowledge, or experience, of.

**Results:** The survey revealed that 77.5% (31/40) of respondents found it difficult to know what to revise when covering the neuroanaesthesia and critical care topics for their exams. 97.5% (39/40) answered that reference guides would be useful for directing their revision. 97.5% (39/40) also felt single sheet reference guides covering the nuances of anaesthesia would be useful to help them navigate their neuroanaesthesia module. The topics put forward by the consultant anaesthetists included external ventricular drains and positioning for neurosurgery.

**Discussion:** This project has so far led to the development of three one-page reference guides. These cover external ventricular drains, the prone position and skull fixation devices. These have received positive feedback and the simple, easy-reference aspect to them has proven useful for revision as well as to read prior to neurosurgical lists. The plan is to create further guides for other areas of the specialty and assimilate them into a quick reference guide.

# Poster Presentations

## 6. Design and Implementation of an Integrated Neuroanaesthesia Educational Package at Cambridge University Hospital

Dr Y Yap<sup>1</sup>, Dr E Schulenburg<sup>2</sup>, Dr D Duane<sup>2</sup>, Cambridge University Hospital NHS Foundation Trust (1. Speciality Registrar 2. Consultant Anaesthetist)

Cambridge University Hospital provides training in neuroanaesthesia to stage 2 and 3 East of England trainees. There is often no experience in neuroanaesthesia for those starting their 3-month module. This has resulted in unique educational challenges for the Consultants endeavouring to deliver applicable and effective training. We have therefore designed and implemented a comprehensive educational package to support our trainees.

The blended-learning programme includes access to 24 E-Learning modules with topics relevant to neuroanaesthesia. These modules fulfil the Key-Capability M criteria for the stage 2 curriculum. All trainees are encouraged to complete individual modules with sectional knowledge checks and a final knowledge test. A passing grade will generate a certificate of achievement which can be uploaded to the Neuroanaesthesia 'triple-C' form.

This resource is supplemented with electronic, mobile-friendly 'Flash Cards' covering essential areas of neurosurgical practice. Trainees can quickly review the salient points of a particular neuroanaesthetic management technique prior to a patient-care episode. All these educational tools can be accessed on our dedicated, password protected Neuroanaesthesia website, [www.camneuro.net](http://www.camneuro.net).

A dedicated neuroanaesthesia simulation training day is delivered to all stage 2 trainees. The main aim is for proactive educational exposure to help familiarise trainees with clinical scenarios they might face during their placement. Trainees complete a multiple-choice paper to assess their current level of knowledge and strong emphasis is placed on debriefing after every scenario to clarify learning outcomes.

Using an educationally succinct format, trainees are afforded the opportunity of attending weekly 30-minute 'lunchtime' tutorials. These are delivered as small group teaching sessions focusing on Key-Capabilities M&N.

Overall, our aim is to deliver different educational opportunities to our trainees supporting the diverse learning styles of these adult learners. We provide simulation-based, online and other technology-enhanced learning in a blended teaching strategy thus incorporating both synchronous and asynchronous instruction.

1. McGrath, *et al.* Staying connected in post-pandemic blended learning environments. *Med Educ.* 2021; 55: 890– 891.

This has previously been presented as a poster at the RCOA College Tutors Meeting in June 2022.

# Poster Presentations

## 7. Just Wired Differently: Neurodiversity Awareness Amongst Anaesthetists

*N. Squires\* ST7 (speaker), N. Lee ST4, J. Dyer Consultant \*Birmingham Children's Hospital, Royal Wolverhampton Trust*

**Introduction:** Prior to an adult diagnosis of dyslexia, I had little awareness of the impact of neurodiversity in training. We wanted to explore neurodiversity awareness amongst anaesthetists, particularly in training and supportive roles.

There are no official figures for the prevalence of neurodivergent doctors, it is estimated that 15 – 20% of the general population are neurodivergent. Neurodiversity is an umbrella term encompassing several conditions: dyslexia, dyspraxia, autism, ADHD, Tourette's, dyscalculia and developmental language disorder. It can impact on processing speeds, learning and communication.

**Method:** A survey was designed and disseminated via email to trainees and consultants within the West Midlands Deanery over five weeks. A total of 119 anaesthetists replied, 69 consultants, 39 specialty trainees, 11 core trainees.

**Results:** Seven percent of respondents had a diagnosed neurodiversity, and 12% identified as neurodivergent. 53% worked with neurodivergent people, mostly as patients (43%). Only 21% of respondents had training on neurodiversity (25% consultants, 16% trainees).

Most respondents (90%) were unaware of the prevalence of neurodiversity in the general population. Approximately 18% identified the 2010 Equality Act provides legal protection. On knowledge of neurodivergent conditions, the most commonly identified were ADHD and autism (95% and 93% of respondents respectively). Only 15 (13%) respondents were able to correctly identify all conditions. 72% were unaware of neurodiversity support interventions and tools (63% consultants, 75% of trainees).

**Discussion:** Overall survey findings show that awareness of neurodiversity amongst this cohort of anaesthetists could improve significantly, with low percentages of training, or knowledge of support tools. The figures improved slightly when comparing consultants and trainees. With greater awareness and training, attitudes and adjustments could be improved for struggling neurodivergent trainees. The limitations of this survey include the low response rate overall, and those replying potentially having prior interest or insight into neurodiversity, as comments showed.

**References:** Br Med Bull 2020 Oct 14; 135(1): 108-125 Neurodiversity at work: a biopsychosocial model and the impact on working adults

# Poster Presentations

## 8. ECG Sign & Save Quality Improvement Project

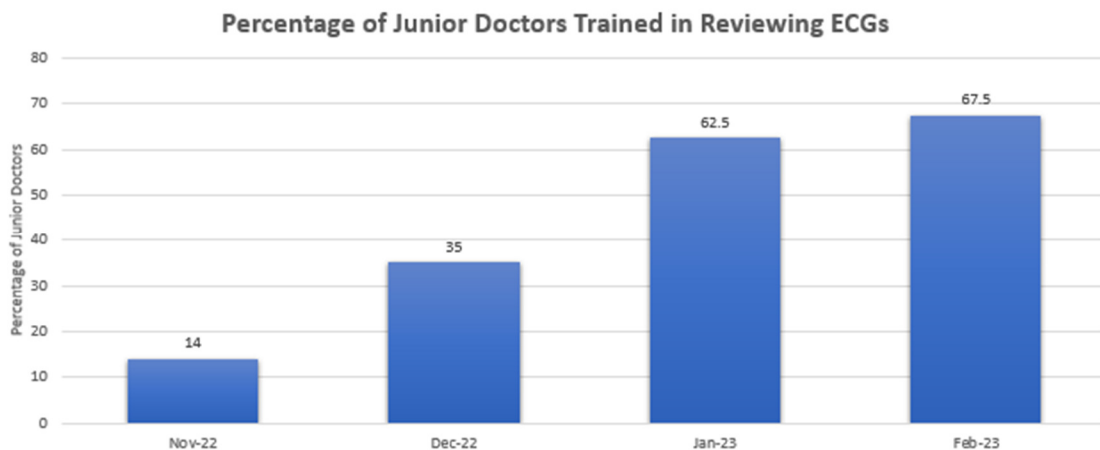
Dr S D'Sa (ST1, Speaker), Dr A Varadhan (ST1), Dr H Jalil (ST1)

In 2019, chest pain accounted for 700,000 presentations to A&E within England alone.<sup>1</sup> It can have both benign and life-threatening modalities. Care Quality Commission guidance advises that all patients with chest pain need to have their ECG performed and reviewed within 30 minutes of presenting to A&E.<sup>2</sup> Our aim is to assess if we are meeting this target in the Emergency Department at Peterborough City Hospital and investigate delays identified.

Data was collected from Health Care Assistants (HCAs) to identify the time taken to get ECGs reviewed. Registrars and consultants recorded how many ECGs they reviewed per shift. Furthermore, we surveyed junior doctors to identify their contribution to reviewing ECGs.

Analysis revealed that 95% of ECGs were reviewed within 30 minutes. On day shifts 41% of ECGs were reviewed within 5 minutes, compared to 15% on night shifts. Additionally, consultants and registrars reported that the volume of ECGs they reviewed would interrupt their other shop floor tasks and patient care. Notably, 86% of junior doctors had not completed the mandatory training to review ECGs on the shopfloor. They reported issues with accessing the training quiz, attaining knowledge and building confidence to review ECGs.

This project focused on improving the engagement of junior doctors in reviewing ECGs to thereby reduce delays in getting ECGs signed whilst also having a wider positive impact on the stakeholders involved. We implemented reminder emails and teaching sessions from December 2022 to March 2023 which has shown an increase in trained junior doctors from 14% in November to 67.5% in February 2023 [Fig. 1]. We are due to complete a second cycle of data collection at the end of March 2023 to assess the impact of our changes on patient care and burden of workload on healthcare staff including senior doctors, HCAs.



**Figure 1:** Chart showing the percentage of junior doctors trained to review ECGs at Peterborough City Hospital Emergency Department from November 2022 to February 2023.

### References

1. Chest pain syndromes, J M Kendal, RCEM Learning, 2019.
2. Patient First: Treatment in the Emergency Department, Care Quality Commission 2022

# Poster Presentations

## 9. ORSIM Improves Advanced Airway Education in Anaesthetics and Surgical Training

*N.Karunaratne<sup>1</sup>, R.Cassin<sup>2</sup>, L.Bridge<sup>3</sup>, B.Batuwitage<sup>4</sup> 1. Presenting author. CT3 Anaesthetics, Liverpool University Hospitals, 2. ST6 Anaesthetist, Liverpool University Hospitals, 3. Consultant Anaesthetist, Wirral University Teaching Hospital., 4. Consultant Anaesthetist, Liverpool University Hospitals*

**Introduction:** Within Merseyside COVID-19 has significantly impacted on many advanced airway training opportunities for trainees. One educational adaptation introduced is ORSIM - a virtual reality fiberoptic simulator providing key common and difficult airway scenarios intertwined with fiberoptic handling. There is evidence that the use of ORSIM prior to procedure improves clinical performance<sup>1</sup>. Our aim was to evaluate the use of ORSIM in providing missed training opportunities and developing advanced airway skills.

**Method:** Data from four hospitals across the Merseyside region were collected. Trainees in anaesthetic, ENT and maxillofacial completed self-assessment questionnaires prior to and following participation in ORSIM scenarios.

**Results:** Of 78 respondents, 60 were anaesthetics trainees and consultants, and 18 were ENT/maxfax trainees.

Amongst the anaesthetics trainees (n=60), 20 respondents reported 'good/very good' dexterity prior to ORSIM. Following ORSIM, this improved to 30 respondents. Of the 20 respondents who reported a 'lack of confidence' prior to ORSIM, only 4 re-responded to lack confidence. Comparably amongst the surgical trainees (n=18), 7 respondents reported 'poor' dexterity prior to ORSIM which improved to only 1 respondent post ORSIM. Of the 8 who reported 'lack of confidence', only 3 re-responded to lack confidence.

Overall, 58 respondents stated ORSIM improved their confidence, while 63 reported improvements in dexterity. All 78 reported an interest in further ORSIM training.

**Conclusion:** ORSIM is an effective educational development intervention which improves confidence and dexterity in fiberoptic handling. Following this study, ORSIM has become integrated into the advanced airway training package and has potential to improve training in surgical specialties.

### References

1. Samuelson ST, Burnett G, Sim AJ, Hofer I, Weinberg AD, Goldberg A, Chang TS, DeMaria S Jr. Simulation as a set-up for technical proficiency: can a virtual warm-up improve live fibre-optic intubation? *Br J Anaesth.* 2016 Mar;116(3):398-404

# Poster Presentations

## 10. A Multi-Faceted Approach to Improving Clinician Confidence in Awake Tracheal Intubation (ATI)

Dr Sarah Harwood, ST6 Anaesthesia; Dr Marion Ashe, ST7 Anaesthesia; Dr Nina Jain, Anaesthetic Consultant, all at St Helens and Knowsley NHS Foundation Trust

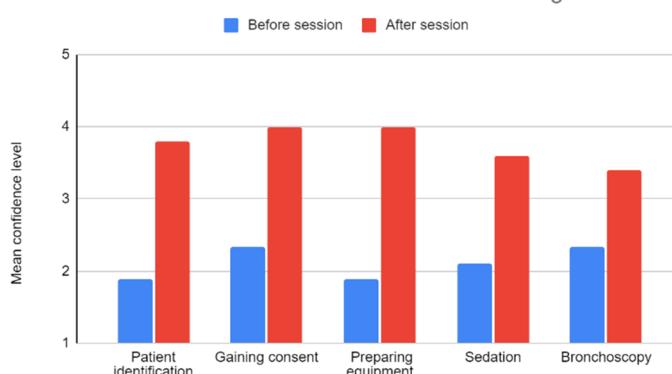
**Introduction:** Confidence is a key component of successful clinical performance<sup>1,2</sup>, and forms through a combination of knowledge, skill practice and experience<sup>3</sup>. Outside tertiary head and neck centres, there is less opportunity to practice ATI skills. We recognised our department within a district general teaching hospital may benefit from detailed ATI teaching for juniors and a refresher session for more senior colleagues aiming to improve confidence in managing this infrequent, potentially stressful and cognitively demanding situation.

**Methods:** We conducted a half-day teaching session for juniors incorporating ATI theory, practical set-up and equipment review, simulation with TCI remifentanyl sedation, Airsim mannequin and Ambu bronchoscope for step-by-step practice, and ORSIM virtual fiberoptic simulator for advanced practice. We surveyed confidence with various aspects of the procedure before and after teaching. Furthermore, we provided 'tea trolley' teaching for consultants and other colleagues unable to attend, repeating the low fidelity step-by-step simulation and ORSIM virtual bronchoscopy.

**Results:** Trainees and SAS grades attending the extended teaching demonstrated improved confidence across all domains for managing ATI; identifying suitable patients, obtaining informed consent, preparing equipment, bronchoscopy and sedation techniques (Figure. 1). The abbreviated 'tea trolley' session attained similarly good feedback with improved average ATI confidence levels.

**Discussion:** Keeping skills up to date is challenging, especially with limited opportunities for practice. Increasing confidence levels through teaching and simulation (low or high fidelity), aids human factors, enhancing ability to manage clinically stressful situations by minimising the additional mental load of unfamiliarity. We demonstrated improved overall confidence in ATI using a multi-faceted teaching approach combining theoretical discussion, practical low-fidelity simulation, and virtual bronchoscopy. We plan to provide this teaching regularly to significantly improve clinician confidence in managing ATI.

Confidence of trainees before and after ATI teaching session



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1. Porter J, Morphet J, Missen K, Raymond A. Preparation for high-acuity clinical placement: confidence levels of final-year nursing students. *Adv Med Educ Pract*. 2013 Apr 30;4:83-9. doi: 10.2147/AMEP.S42157. PMID: 23900655; PMCID: PMC3726646.
2. Owens KM, Keller S. Exploring workforce confidence and patient experiences: A quantitative analysis. *Patient Experience Journal*. 2018; 5(1):97-105. doi: 10.35680/2372-0247.1210.
3. Burgess, A., van Diggele, C., Roberts, C. *et al*. Tips for teaching procedural skills. *BMC Med Educ* 20 (Suppl 2), 458 (2020). <https://doi.org/10.1186/s12909-020-02284-1>



# Poster Presentations

## 11. Sim Training - Venturing Outside Theatres

*Sneha Raju (Speaker, ST6 Anaesthetic trainee, Leeds Teaching Hospitals NHS Trust, West Yorkshire, Leeds)*  
*Nilmini Kaushalya Manawaduge, Locum Consultant, Leeds Teaching Hospitals NHS Trust, West Yorkshire, Leeds,*  
*Maheeka Nirmalee Rajamuni (Locum Consultant, Leeds Teaching Hospitals NHS Trust, West Yorkshire, Leeds)*

**INTRODUCTION:** Contrast-induced anaphylaxis in cardiac physiology procedures is a potentially life-threatening allergic reaction and can be stressful, especially in day procedure settings. It is crucial to understand how anaphylaxis presents, as there is a broad differential diagnosis, and prompt specific treatment is essential.

Simulation is a powerful tool for learning in health care and can be used to mimic real-life scenarios to provide feedback on both individual and team-based levels.

**AIM:** To educate and train cardiac electrophysiologists in the management of anaphylaxis using simulation-based methods.

**METHODS:** We liaised with the cardiac physiology team of Leeds General Infirmary and ascertained the objectives of the training session and identified a suitable time and place.

This sim session was conducted in June 2022 with 16 participants. We commenced the simulation with a demonstration, leading two sim sessions. The focus was primarily on the initial management and maintaining the patient's stability until help arrived.

Pre- and post-course questionnaires were used to assess if the teaching sessions were helpful.

**DISCUSSION:** Three episodes of severe anaphylaxis in 3 months were reported since SonoVue Contrast, a second-generation contrast used to gain superior visualisation of cardiac chambers in Dobutamine Stress Echocardiography (DSE). That was the main drive to initiate this teaching session.

We commenced the session with a presentation on identifying and managing anaphylaxis, including the local investigation process that follows afterward.

The sim sessions involved scenarios complicated with anaphylaxis, followed by a debrief.

The team received the learning objectives well, and we obtained excellent feedback at the end of the session. Furthermore, the post-course questionnaires vividly demonstrated that the cardiac physiologists had developed confidence in managing anaphylaxis in the DSE setting, which was our ultimate goal.

### REFERENCES:

- Emergency treatment of anaphylaxis: Guidelines for health care providers. Resuscitation council UK 2021.
- Aggarwal R, Mytton OT, Derbrew M, et al Training and simulation for patient safety BMJ Quality & Safety 2010;19:i34-i43.
- Dieckmann, P., Patterson, M., Lahlou, S. et al. Variation and adaptation: learning from success in patient safety-oriented simulation training. Adv Simul 2, 21 (2017). <https://doi.org/10.1186/s41077-017-0054-1>

# Poster Presentations

## 12. Preparation for Practice: Implementing a Consultant Interview Course

R. Andelic<sup>1</sup> (speaker), R. Butterworth<sup>2</sup>, C. Browell<sup>3</sup>

1 CT3 Anaesthetic trainee, James Cook University Hospital, Northern Deanery

2 ST7 Anaesthetic trainee, James Cook University Hospital, Northern Deanery

3 Consultant Anaesthetist & A-liNE director, Royal Victoria Infirmary, Northern Deanery

**Introduction:** For many trainees, obtaining their desired consultant post signifies the culmination of years of specialty training.

Anaesthesia learning in the North East (A-liNE) is an organisation dedicated to supporting the career development of anaesthetic trainees and, although courses exist, A-liNE recognised that preparation for consultant application and interview was not specifically or formally delivered to anaesthetic and intensive care (ICM) trainees in the North East.<sup>1</sup>

**Methods:** A-liNE wanted to develop a course supporting senior trainees in their preparation for the consultant application process. The course programme was informed by questionnaire results, completed by recently appointed anaesthetic and ICM consultants regarding their experience of applying for consultant posts. Key factors identified from the course development questionnaire included the desire for mock interview practice and delineating the application process. Location and cost were recognised barriers to trainees attending similar courses.

A successful pilot 1-day 'Consultant Interview Preparation Course', open nationally to anaesthetic and ICM trainees, was organised and delivered in the North East in November 2022. Pre- and post-course surveys were utilised to assess delegates' views on their perceived preparedness and to identify particular strengths and areas for improvement of the course.

**Results:** All 23 delegates completed the pre-course survey and 19 the post-course survey. Prior to the course, only 4% felt somewhat or extremely prepared for consultant applications. Following the course, this increased to 84% of respondents. 100% of delegates stated they would recommend this course to others.

**Conclusion:** Utilising questionnaire results aided development of a course with excellent feedback. The mock interviews were identified as a highlight of the day, reinforcing the comments from the questionnaire. Following the success of this course, A-liNE now intends to run this as a regular feature for future trainees.

### References:

1. Anaesthesia Learning in the North East. <https://www.a-line.org.uk>. Accessed January 8, 2023.

# Poster Presentations

## 13. Are Anaesthetists Able to Identify the Anatomical Landmarks for the Right Internal Jugular Vein Cannulation? A Double-Blinded Case-Controlled Study

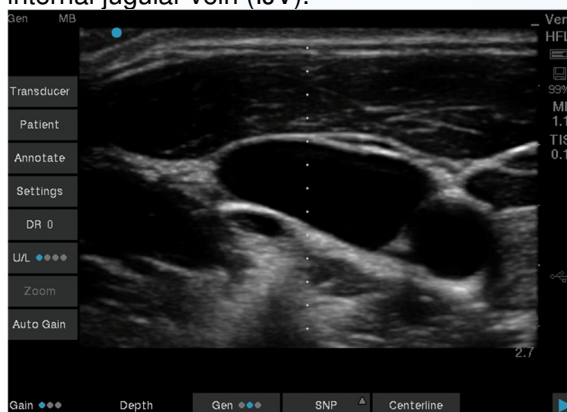
Fideron Shun Long Tsang<sup>1</sup>, Sameen Anodiyil<sup>1</sup>, Bethany Seale<sup>2</sup>, Apurv Sehga<sup>2</sup>, David W. Hewson<sup>3</sup>

1. Medical Student, University of Nottingham, Nottingham, UK
2. Speciality Registrar in Anaesthesia, East Midlands School of Anaesthesia
3. Consultant in Anaesthesia & Clinical Associate Professor, Nottingham University Hospitals & University of Nottingham

**Background:** Central venous access is an essential skill. The right internal jugular vein (IJV) is the most common site of central venous access. Ultrasound guided central access has been recommended by national guidance for over 20 years.<sup>1</sup> Knowledge of surface landmarks, however, is recommended<sup>2</sup> and is required when ultrasound is unavailable or impractical.<sup>3</sup> This study investigated the ability of anaesthetists to identify the needle insertion point of right IJV cannulation using anatomical landmarks.

**Methods:** In this single-centre, case-control, double-blind study anaesthetists were asked to use anatomical landmarks to identify a skin insertion point and trajectory for a needle to cannulate the right IJV of a volunteer subject, as if inserting a central venous catheter. The primary outcome measure was whether the selected needle insertion point, and trajectory intersected any part of the lumen of the right IJV (Figure 1). A comparison was made between task performance in 2023 and 2009 cohorts.

**Figure 1:** Ultrasound image obtained from healthy volunteer demonstrating phantom needle trajectory (dashed line) intersecting right internal jugular vein (IJV).



**Results:** 89 participants were recruited to the study between July 2022 and February 2023. 50 (56%) of the 2023 cohort were able to identify an insertion site that would intersect the right IJV, while 39 (44%) of participants were unsuccessful. Of those unsuccessful, 16 (18%) had a phantom needle trajectory that traverses the carotid artery.

**Discussion:** A comparison was made between task performance from our study and a 2009 cohort. In comparison, both confidence and use of the landmark technique has fallen, while ability to identify the landmarks was unchanged. One significant result, however, was a significant increase in potential carotid artery puncture in our cohort. Our study demonstrates that while anaesthetists have retained the ability to identify surface landmarks there is greater risk of complication when these are incorrectly identified. Knowledge of safe landmarks may therefore represent a growing educational gap for anaesthetists.

### References:

2. National Institute for Clinical Excellence. *Guidance on the Use of Ultrasound Locating Devices for Central Venous Catheters* [NICE Technology Appraisal, No. 49.] London: NICE, 2002
3. Bodenham Chair, A., et al. "Association of Anaesthetists of Great Britain and Ireland: Safe Vascular Access 2016." *Anaesthesia*, vol. 71, no. 5, 17 Feb. 2016, pp. 573–585, [www.ncbi.nlm.nih.gov/pmc/articles/PMC5067617/](http://www.ncbi.nlm.nih.gov/pmc/articles/PMC5067617/), <https://doi.org/10.1111/anae.13360>.
4. Brass, Patrick, et al. "Ultrasound Guidance versus Anatomical Landmarks for Internal Jugular Vein Catheterization." *Cochrane Database of Systematic Reviews*, 9 Jan. 2015, <https://doi.org/10.1002/14651858.cd006962.pub2>. Accessed 13 Aug. 2019.

# Poster Presentations

## 14. Can US Guided Venous Access Be Taught in a Few Hours?

Hajnalka Huszka (Anaesthetic Education Fellow), Olivia Ward (Anaesthetic Clinical Fellow), Josh Toughey (Anaesthetic CT1), Suzannah Ward (Anaesthetic Consultant) Worthing Hospital, University Hospitals Sussex NHS Foundation Trust

**Introduction:** Using an US (ultrasound machine) for cannulation on tricky patients increases first attempt success rate, reduces number of attempts to success, reduces time to vascular access (waiting for an anaesthetist) and increases patient satisfaction. (1) Despite the advantages, only a minority of non-anaesthetic doctors can use US to support their cannulation technique in difficult cases. This resulted in multiple cannula referrals on a daily basis and our team decided to investigate if we could make a difference by organising an US guided cannulation course.

**Methods:** We started collecting data on how many referrals are made to the anaesthetic department to cannulate someone on the wards. We also prepared a questionnaire if there is an interest for non-anaesthetic doctors to learn US guided cannulation. Based on this feedback we set up a 3-hour long education session on US guided venous access. After a short introduction, participants were divided into 3 small groups. The groups were rotating between 3 stations: Tips and tricks, Basics of US and US guided cannulation. At the end of the course, we collected feedback to compare responses with the pre course questionnaire.

**Results:** Following the course we monitored the number of cannula referrals made to the anaesthetic department and found that referrals decreased by 75%. Feedback collected at the end of teaching showed that the confidence of performing US guided cannulation improved amongst attendees.

**Discussion:** Our course received very positive feedback, decreased the number of cannula referrals to the anaesthetic department and improved the confidence of US guided technique of non-anaesthetic doctors. Based on our results we can confirm that US guided venous access can be taught in a few hours. The set up of rotating small groups is appropriate. In the future we are hoping to extend the initiative to other hospitals in the region.

### Reference:

- (1) van Loon, F.H.J., Buise, M.P., Claassen, J.J.F., Dierick-van Daele, A.T.M. and Bouwman, A.R.A. (2018) 'Comparison of ultrasound guidance with palpation and direct visualisation for peripheral vein cannulation in adult patients: a systematic review and meta-analysis', *British Journal of Anaesthesia*, 121(2), pp.358–366.

# Poster Presentations

## 15. Student Grand Round: A Peer Teaching Initiative

*Dr Ahmed Nazari, Foundation Year 1, Northampton General Hospital*

*Dr Mariya Rajesh, Foundation Year 1, Northampton General Hospital*

*Dr Chris Leng, Consultant Anaesthetics and Critical Care, Northampton General Hospital*

**Introduction:** Oral presentations and public speaking skills are poorly emphasised in the medical curriculum. Peer teaching is a form of active learning whereby students research a case or topic and present this to their peers. Peer teaching is proven to improve conceptual understanding and develops problem solving and presentation skills [1], all of which are crucial to doctors. Cognitive congruence theory states that students learn more effectively from peer teachers as they are more likely to comprehend the student's current knowledge, identify areas of difficulty and formulate creative solutions to learning [2].

**Objectives:** Encourage the inquisitive minds of medical students to read around complex cases they have encountered and share this knowledge via an oral presentation to their peers.

Develop presentation and basic teaching experience, summarise complex cases and practice succinct sharing of information in the form of SBAR (Situation, Background, Assessment, Recommendation) handover tool.

**Methods:** 21 third year medical students took part in weekly peer teaching, whereby they presented cases from various medical specialities. Their knowledge and understanding were assessed with an interactive quiz and feedback via a survey was gathered before and after sessions.

**Results:** There was a 33.3% increase in the understanding of medical topics across all students, 65.7% increase in the confidence of students when presenting clinical cases to peers and seniors. All 21 students rated the session 4-5/5 in terms of quality and 95% of students would recommend this style of teaching.

**Summary:** Peer teaching has shown to be an effective learning method with promising results, students are given the opportunity to explore topics and the freedom to teach in creative ways to understand complex concepts. Integration of new teaching methods such as this addresses the gaps in the medical curriculum and develops students as both scholars and teachers.

### References:

1. Tullis J. Why does peer instruction benefit student learning? Proceedings of the 2020 AERA Annual Meeting. 2020.
2. Bowyer E, Shaw S. Informal near-peer teaching in medical education: A scoping review. Health Education (Abingdon) [Internet]. 2021 Jan;34(1):29–33. Available from: <https://pubmed.ncbi.nlm.nih.gov/34213441/#affiliation-1>

# Poster Presentations

## 16. Improving Teaching in the Post Anaesthetic Care Unit

Dr Ismaa Aslam (ST5 Anaesthetics), Dr Ajay Sathyanarayana (ST7 Anaesthetics), Dr Kavita Dasari (Consultant Anaesthetist) University Hospitals Coventry and Warwickshire NHS Trust

**Introduction:** Low morale amongst staff working in the Post Anaesthetic Care Unit (PACU) in our trust has led to poor staff retention and recruitment.

**Method:** A paper survey of 11 questions was distributed to all available recovery nurses. 22 responses were collected. This was followed by focus-group discussions with these staff to identify their learning needs.

**Results:** The lack of an educational program was highlighted as a key issue. Only 27% of all recovery staff received any teaching in the last month. Airway emergencies and blood sugar management were identified as primary learning needs. The importance of teaching was identified (Figure 1).



**Figure 1** Reasons identified by Recovery staff as to the importance of teaching.

A bespoke, structured teaching programme was developed. This was initially presented face-to-face, with a 10-minute session by anaesthetic trainees followed by questions.

Feedback was overwhelmingly positive, but we recognised there were problems in scheduling sessions regularly. A hybrid programme of teaching utilising both live and pre-recorded sessions with a physical whiteboard was developed to accommodate shift pattern working. Presentations were pre-recorded and made available to staff via the Trust's Intranet.

**Discussion:** Our study highlights a common theme of the lack of teaching provided to recovery nurses. Anaesthetists are well-placed to share knowledge regarding topics relevant to recovery staff. This has improved working relationships, morale and in turn, can improve the quality of recovery care our patients receive in due course.

# Poster Presentations

## 17. Novice Anaesthetist: Their Perceived Stressors, Learning Behaviours and How It Can Be Optimised

Dr Hui Ching Ho CT2, Dr Amy Howard CT2 Kettering General Hospital

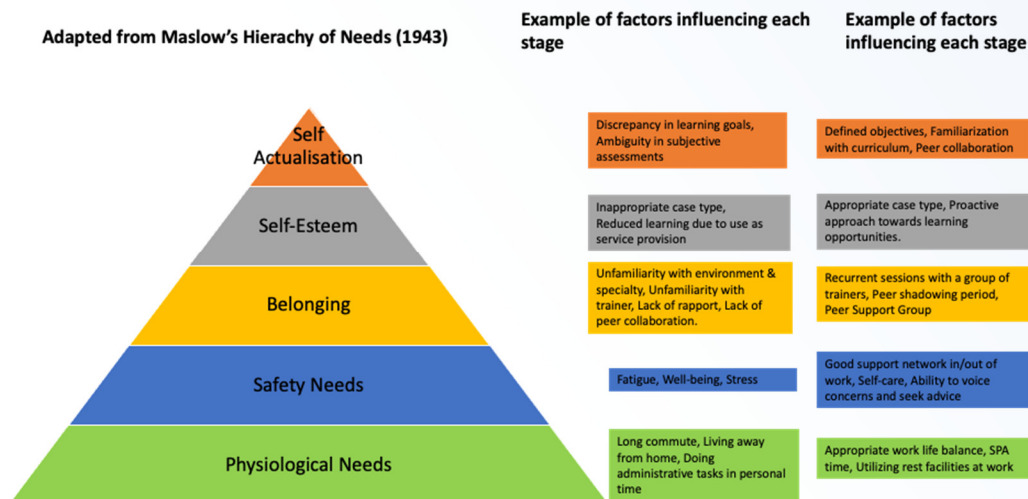
**Introduction:** Novice anaesthetists at the start of their anaesthetic training spend 3 to 6 months learning the fundamental skills of anaesthesia under direct supervision to complete their initial assessment of competence (IAC).

Airway management is one of these fundamental skills, failure of this and inability to oxygenate can have catastrophic implications, therefore novice anaesthetists are expected to acquire sound understanding of the anatomy and physiology along with having hands-on experience and confidence in themselves to be able to deal with any problems they may encounter.

**Method:** A qualitative research study was used to explore the stressors perceived by novice anaesthetists, how they impacted wellbeing and learning behaviours, and reviewed how these could be improved. Ten one-to-one virtual, semi-structured interviews with novice anaesthetists highlighted and explored these.

**Results:** A number of perceived stressors were repeated throughout the interviews. These included training vs service provision, varying case type, familiarity with specialty, theatre availability, support in and out of work, lack of clarity surrounding the curriculum and the commute to work. Factors which were reported as affecting learning behaviours included case load, training experience, the particular trainer or ODP, ambiguity of the portfolio, peer collaboration and teaching.

**Discussion:** This is the first in-depth study looking into perceived stressors of novice anaesthetists and how learning behaviours are affected. As demonstrated in Figure 1 we can see how these relate to Maslow's hierarchy of needs.



For novice anaesthetists to reach their full potential and improve their education and wellbeing they need all stages to be optimised from the base up. This can only be done by highlighting the issues raised to a wider scale and empowering all to be active in the improvement of the learning environment.

**References:** Maslow, A. H. (1943). 'A theory of human motivation', Psychological Review, 50(4), 370-96.

# Poster Presentations

## 18. Role of Inter-professional Education in Improving Patient Safety During Airway Management

*D Williams<sup>1</sup>, U Ansari<sup>1</sup>, S Radhakrishna<sup>1</sup>, R Dravid<sup>2</sup>, P Gauthama<sup>3</sup>, B Netke<sup>4</sup>, C Mendonca<sup>1</sup>*

*<sup>1</sup> University Hospitals Coventry & Warwickshire NHS Trust <sup>2</sup> Woodland Hospital Kettering*

*<sup>3</sup> University Hospitals of Leicester NHS Trust, Leicester <sup>4</sup> Royal Wolverhampton Hospital, Wolverhampton*

**Introduction:** The structured management airway response team (SMART) course involved interprofessional teams, working in pre-delegated roles, taking part in simulated difficult airway scenarios to emphasise nontechnical skills such as team working, task delegation, situational awareness and decision making.<sup>1</sup> The main principle of the SMART course is clinical staff who work together should be trained together. We wished to assess how effectively the concepts and skills taught in the SMART course have been implemented in the participants' workplace. The main outcome measures were examples of good clinical practice learnt through the course, with secondary outcome measures including participants' opinions on the course's usefulness. **Methods:** A 14 -question questionnaire consisting of any clinical scenarios or near misses experienced at workplace and how they applied the knowledge and skills was designed on Microsoft Word®. Following review from local RDI department (GF507), the questionnaire was distributed electronically via Microsoft forms to 161 delegates who attended the course in the past five years.

**Results:** 32 participants, with half being senior doctors, a quarter ODPs/Nurses and a quarter junior doctor grade. 18 had experienced a near miss or a critical incident following the course, only 6 of which were anticipated. Of these events, improved communication and pre-allocation roles to team members were often quoted as learning events from SMART courses that were applied in the management of those incidents.

**Discussion:** The course has helped improve participants' anticipation of airway problems, situational awareness, communication within the team, and management of unanticipated critical incidents. Many respondents agreed that they have made changes in their workplace, such as creating definite plans for airway management, using checklists and time-outs, and introducing team members with clear role allocation. In conclusion, interprofessional education is a promising approach to improving patient safety in airway management.

### References:

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# Poster Presentations

## 19. Improving Assistance with Intubation in A&E – An MDT Approach

*Dr Megan Oldbury, CT3 Anaesthetics, The Mid Yorkshire Hospitals Trust*

**Introduction:** The Mid Yorkshire Hospitals Trust has over 58,000 emergency admissions per year. The requirement for an emergency intubation in A&E by the intensive care team is a frequent occurrence and sometimes it is not always possible to have an operating department practitioner (ODP) to assist with intubation and transfer. In these cases, the anaesthetist and the A&E team must work together to safely intubate and prepare the patient for transfer, but this can be difficult if A&E staff are unfamiliar with the process. Simulation training enables staff to practice skills in a safe and controlled environment and equips staff to develop skills before using them in their practice (ref 1).

**Aims:** The aim of this project is to develop confidence with preparing for and assisting with intubation and to improve teamwork between the anaesthetic and A&E team.

**Method:** A survey was sent out to the anaesthetists in training to gain an insight into their experiences of intubations in A&E. A second survey was sent out to A&E staff to gain a better understanding of their confidence in helping the anaesthetic team to prepare for intubation and hospital transfer. A series of teaching sessions and simulation sessions were then organised to familiarise A&E staff with airway equipment and protocols used in the peri intubation period. Educational posters were also developed. Feedback was then collected to assess whether these sessions had improved confidence and teamwork between the departments.

**Results/Conclusion:** Following simulations in intubation and preparation for transfer, 89% of those surveyed agreed that it improved confidence and teamworking skills between the departments. The development of these technical and non-technical skills is important to support the anaesthetist when an ODP is not available.

### References:

1. Alinier, G., Hunt, B., Gordon, R. and Harwood, C. (2006), Effectiveness of intermediate-fidelity simulation training technology in undergraduate nursing education. *Journal of Advanced Nursing*, 54: 359-369. <https://doi.org/10.1111/j.1365-2648.2006.03810.x>

# Poster Presentations

## 20. Understanding the impact of widespread video-laryngoscope use on trainees: A quality improvement initiative to deliver improved airway skills teaching

*Victor Bill (Speaker, CT3), Neha Baduni (CF), O'Baird Haider (CT2), Elankathir Selvaraasan (Cons)*  
*Manchester University Foundation Trust*

**Introduction:** Laryngoscopy is a crucial component of airway management in anaesthesia. Video-laryngoscopy (VL) has become increasingly popular in recent years, but there is limited information regarding its impact on anaesthesia training. Trainees rotating into new trusts may be unfamiliar with the various types of video-laryngoscopes in use in the trust, and the increasing use of VL as a first line airway intervention may impact trainees progress in developing direct-laryngoscopy (DL) confidence<sup>1</sup>. The aim of this quality improvement project was to investigate the experience of rotating trainees in both VL and DL and identify ways in which training could be improved.

**Methods:** A survey was conducted among anaesthetic trainees at Manchester University Foundation Trust. The survey assessed the trainees' confidence and familiarity in using various types of laryngoscopes and video-laryngoscopes and in which areas trainees felt they needed further experience or training.

**Results:** 40 trainees responded to the survey, including anaesthetic trainees from grades CT1 to ST7, clinical fellows and intensive care trainees. 42.5% of trainees said they had used DL less than 10 times in the last month, and 57.5% of trainees said they felt they needed more experience with DL. The video-laryngoscope the majority of trainees (69.2%) felt most confident with was the McGrath™ MAC, whilst 28.2% felt most confident using the GlideScope. 61.5% of trainees said they felt they would benefit from more simulation and training on VL.

**Conclusion:** Our results show that many trainees feel they need more training and experience with both DL and VL, and that the video-laryngoscopes that trainees are confident with can vary widely due to rotation. Following our results, we are developing several training initiatives to improve confidence and skill using a variety of laryngoscopes.

### References:

1. Kee, Adrian; See, Kay Choong. 286: Impact of videolaryngoscopy use by trainee physicians on direct laryngoscopy success rates. *Critical Care Medicine* 44(12):p 148, December 2016.

# Poster Presentations

## 21. Inexpensive Tofu-Based Phantoms for Teaching Ultrasound-Guided IV Access

Christopher James Marsh, CT3 Anaesthetics, St Helens & Knowsley NHS Trust, Liverpool

**Introduction:** Ultrasound-guided vascular access is an important skill in the armoury of the anaesthetic trainee. However, acquiring and honing this skill often relies on the availability of expensive industrial phantom models or practicing directly on patients, which carries both safety and ethical implications. Tofu is well-established as an effective ultrasound medium which is suited to the manufacture of part-task training models.

**Methods:** Training phantoms were constructed using blocks of extra-firm tofu to represent soft tissue through which 'blood vessels', fabricated from modelling balloons containing a red food colouring solution designed to represent blood, were inserted. The phantoms were incorporated into an advanced IV access workshop for junior doctors, enabling participants to gain hands-on practice of ultrasound-guided cannulation [Fig. 1]. Participants were from a range of clinical backgrounds and had varying degrees of prior experience of ultrasound-guided vascular access.

**Results:** Verbal and written feedback indicated that participants felt significantly more confident in performing ultrasound-guided IV access after practicing with the tofu-based phantom. All participants (n=14) 'strongly agreed' that the teaching was relevant and pitched at the correct level, with an appropriate degree of interaction and good standard of delivery and teaching skills. All participants felt that the session should be repeated as a regular item. Free-text comments were unanimously extremely positive, with participants commenting on the high fidelity of the phantom and benefits of hands-on practice.

**Discussion:** This cheap and easily produced tofu-based phantom offers a highly effective alternative to more elaborate and expensive industrial models for teaching ultrasound-guided vascular access. It is environmentally and ethically superior to animal-based models and can be produced for less than the price of a cup of coffee. This accessible approach is particularly pertinent in resource-poor settings, or those in which more sophisticated training models are unavailable.

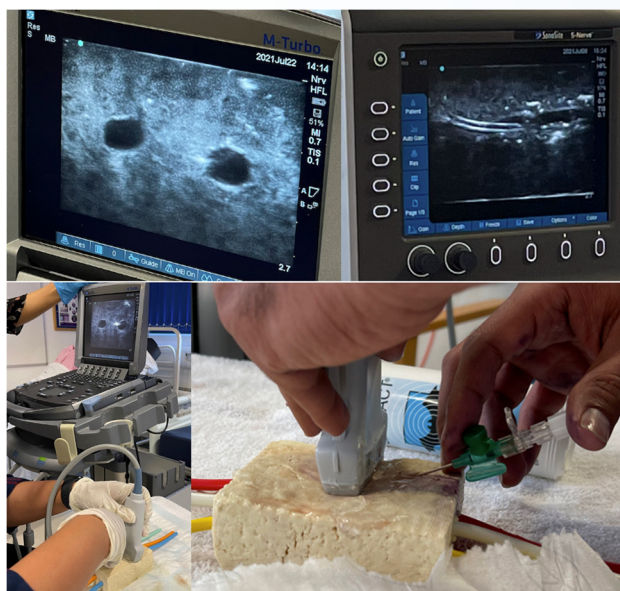


Figure 1 This work has been submitted to a medical education journal with a view to future publication. It has not been presented in any other format at any other event.

# Poster Presentations

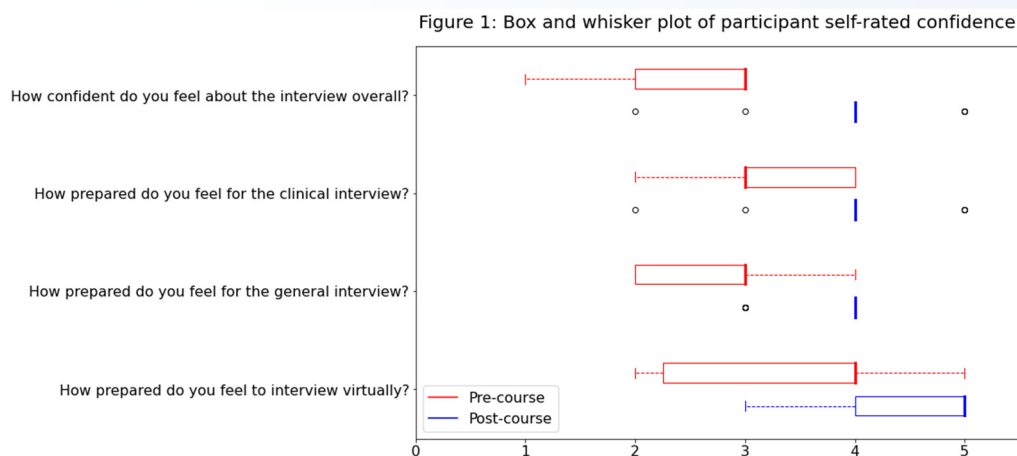
## 22. CT1 Anaesthetics Mock Interviews: A Near-To-Peer Teaching Experience

M Gray (Speaker), E Brown, S Clarke, S Hunter, N Miller, G Mond, P Scarfield, A Truelove  
CT1s, Royal Free Hospital, London.

**Introduction:** An online interview for anaesthetics recruitment is a daunting challenge, which we as a CT1 cohort recognise. We set up a virtual near-to-peer interview preparation course for candidates shortlisted for online interviews.

**Methods:** Aiming to deliver a high-fidelity experience, we delivered virtual mock interviews with a panel of two interviewers for each of our candidates, following the format and timings of the interview stations as described by ANRO. We gave verbal and written feedback based on the ANRO scoring matrix, as well as disseminating guidance from our college tutors and sharing other useful resources with candidates. Candidates were asked to rate their preparedness over a range of areas on a 5-point Likert scale before and after undertaking the course. The interviewer faculty also completed feedback regarding our own experiences as near-to-peer teachers.

**Results:** 22 candidates completed the course. Pre- and post-course feedback forms showed an increase in median participant self-rated overall confidence, and in median preparedness for the clinical and non-clinical stations and interviewing online (Figure 1).



We collected qualitative feedback from faculty, and, using thematic analysis, identified key learning points. We saw improved confidence in delivering constructive feedback, and improved confidence in interview techniques for future interviews. All 8 faculty increased their confidence in delivering near-to-peer practice interviews and found it an educationally valuable experience.

**Discussion:** This near-to-peer interview course was feasible and gained excellent feedback from both participants and faculty. We were able to use our recent experience as successful interviewees to help our candidates and saw that both they and our faculty found this an educational and rewarding experience. Next year, we hope to run this course again, taking into account our feedback.

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**References:** Royal College of Anaesthetists, CT1 Anaesthetics Applicant Guidance – August 2023  
Accessed via <https://anro.wm.hee.nhs.uk/Downloads> 13/03/2023

# Poster Presentations

## 23. A Multi-Disciplinary Airway Workshop – Training, Learning and Succeeding Together to Improve Airway Safety

Gosling MF,<sup>1</sup> Marsh C,<sup>2</sup> Cameron C,<sup>2</sup> Kelly FE.<sup>2</sup>

1. Clinical Fellow 2. Consultant

Department of Anaesthesia and Intensive Care Medicine, Royal United Hospitals Bath NHS Foundation Trust, Bath, UK

Airway management has been in the spotlight recently with multiple high profile airway events being reported and a national and international drive to gain consensus on airway management, especially with regard to unrecognised oesophageal intubation. It is recognised that interprofessional simulation training, including practice drills, are key if we are to improve airway safety.<sup>1</sup> The benefits of interdisciplinary education are not just limited to the knowledge and practice of the skills involved in airway management. The non-technical skills benefits include creating a culture of mutual respect, promoting a shared mental model, flattening the hierarchy and collaborative practice.<sup>2</sup> The importance of these benefits in airway safety cannot be overstated.

We have run bi-annual out-of-theatre departmental workshops for 17 years with practical stations relating to Plans A, B and D of the 2015 Difficult Airway Society guidelines.<sup>3</sup> With a significant turnover of theatre staff and social distancing during the COVID-19 pandemic limiting educational opportunities, we felt that it was important to run this workshop and organised it to coincide with our audit afternoon to enable the whole multidisciplinary (MDT) to attend.

Thirty-seven staff attended with 17 participants (45%) being members of the MDT other than doctors. Thirty-four completed feedback forms (response rate 91%). Overall, feedback was very positive, with the following proportions of attendees reporting that the interprofessional team presence in the workshop increased relevance to their practice (97%), improved the shared mental model when managing difficult airways (97%), increased confidence to speak up when managing a difficult airway (88%) and aided achieving learning outcomes (85%).

We have demonstrated that it is not only possible to deliver high quality interdisciplinary airway workshops but that the presence of different members of the MDT improved the feedback and the achievement of learning outcomes. This will guide the planning of future airway workshops.

### References

1. Chrimes N, Higgs A, Hagberg CA et al. (2022), Preventing unrecognised oesophageal intubation: a consensus guideline from the Project for Universal Management of Airways and international airway societies. *Anaesthesia* 2022; 77: 1395-415.
2. Kelly FE, Frerk C, Bailey CR et al. Implementing human factors in anaesthesia: guidance for clinicians, departments and hospitals. *Anaesthesia* 2023; 78: 458-478.
3. Frerk C, Mitchell VS, McNarry AF, et al. Difficult Airway Society 2015 guidelines for management of unanticipated difficult intubation in adults. *British Journal of Anaesthesia* 2015; 115: 827-48.

# Poster Presentations

## 24. Trainee Wellbeing Booklet

*K Nepal, Specialty Doctor, speaker (The Rotherham NHS Foundation Trust); M Read, CT4 (Sheffield Teaching Hospitals); K Newton, CT4 (Sheffield Teaching Hospitals)*

**Introduction:** Starting anaesthetic training can be a daunting prospect. The initial learning curve is steep and trainees have to quickly assimilate new skills and knowledge.

In an attempt to alleviate some of the difficulties of this period, the authors composed a booklet of information relevant to the novice anaesthetist. The aim of this booklet was to allow trainees a quick reference guide where they could readily access relevant information and signpost them to sources of help.

**Methods:** The authors surveyed anaesthetic trainees approaching the end of CT1 to establish which aspects they found stressful and what information they would have found useful upon starting. Trainees scored statements on a scale of 1 (not at all stressed) to 5 (very stressed), in addition to free text questions. This information was then used to write a booklet including basic clinical and non-clinical information pertinent to commencing anaesthetic training.

**Results:** The two areas causing most stress for trainees were, "Feeling behind or less experienced than other people" (mean score of 3.8) and "Starting to think about the primary FRCA exam" (mean score of 4.3).

Statement	Mean Score
Understanding the new working environment (work structure, team environment, etc.)	3.0
Getting to grips with new skills and the basics of anaesthesia (e.g. drugs, airway, principles of anaesthesia)	3.3
Confidence in being left by yourself and level of supervision given	3.5
Using the e-portfolio, understanding which assessments to get signed off for your stage of training	3.3
Impact of the new curriculum on getting assessments completed (e.g. supervision levels)	3.5
Feeling behind or less experienced than other people	3.8
Extra requirements of training (courses, CV building, projects)	3.5
Uncertainty about going onto the on-call rota	3.7
Admin queries (pay, annual leave, study leave, travel expenses etc.)	3.0
Starting to think about the primary FRCA exam	4.3
How stressful did you find starting anaesthetics CT1 compared to starting as an FY1?	2.3

The free text questions demonstrated a lack of consistent supervision and frustration with having a different consultant on each list, meaning trainees were being taught different anaesthetic techniques for similar procedures. There was also concern about administrative issues such as rotas, leave and less-than-full-time working.

**Discussion:** We produced a booklet outlining some basics of clinical anaesthesia, aiming to provide some consistency to new trainees. There was also a section covering relevant administrative procedures to guide trainees. This was distributed to our most recent cohort of novice anaesthetists across South Yorkshire. The authors will continue to survey anaesthetists at the end of their novice period and update the booklet in order to help trainees through this initial difficult period.

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